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Filing Date	March 31, 2004
First Named Inventor	Richard D. Haun
Art Unit	3671
Examiner Name	Tara L. Mayo
Attorney Docket Number	OPE-1001-CP2

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
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- ☑ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
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Remarks

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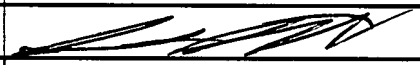
Signature			
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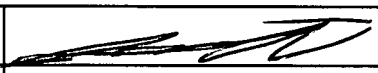
Signature			
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Shawn Hunter

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:	**Richard D. Haun**	Examiner:	**Tara L. Mayo**
Serial No.:	**10/814,464**		
Filed:	**03/31/2004**	Art Unit:	**3671**
For:	**Floating Platform with Storage Tanks for Compressed Gas and/or Hydrate Forms of Hydrocarbons**	Attorney Docket No.:	**OPE-1001-CP2**

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

CORRECTED APPEAL BRIEF

I. Real party in Interest

The real party in interest is:

OPE International L.P.
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Houston, Texas 77042

II. Related Appeals and Interferences

There are no other appeals, interferences, or judicial proceedings that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. Status of claims

The application as filed included claims 1-17. Claims 4-5, 7-8 and 17 have been cancelled. Claims 1-3, 6 and 9-16 are currently pending in the application and were finally rejected on May 31, 2006.

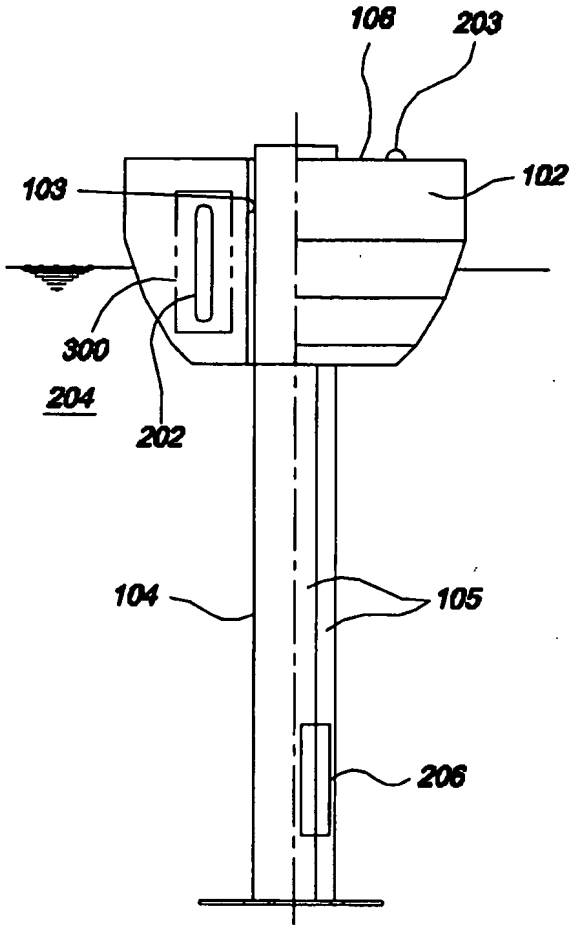
IV. Status of Amendments

In response to the Final Office Action of May 31, 2006, Applicant filed a Notice of Appeal on August 23, 2006.

Applicant filed an amendment of claims on August 17, 2006 subsequent to the issuance of the Final Office Action. This amendment was made to correct a claim objection and place the claims in better for consideration on appeal. The Examiner has entered this amendment. See Advisory Action mailed August 28, 2006.

V. Summary of Claimed Subject Matter

Applicant's invention is directed to an "offshore floating facility for storage of hydrocarbon gas under controlled pressure and temperature and/or for the storage of the hydrate form of hydrocarbons gas." Specification at [0006]. Figure 2 of the application is reproduced below and depicts an exemplary floating vessel 100:



"The vessel 100 has a floating hull structure 102 and a center column assembly 104." Specification at [0013]. "The center column assembly 104 is retained within a hollow central section 103 . . . and is axially moveable with respect to the hull 102 so that the center column assembly 104 is extendable and retractable below the hull 102." Id. ". . . Figure 2 reveals storage vessels 202 within the hull 102 for containing hydrocarbon gases and/or hydrates." Specification at [0014]. "The storage vessels 202 may extend above the deck 106, as well." Id.

"The storage vessels 202 may further be provided with an environmental boundary 300, as shown in Figure 2, to improve the volumetric or separation efficiency of the vessels 202." Id. The environmental boundary is described in greater detail with reference to Figure 3 of the application, which is reproduced here:

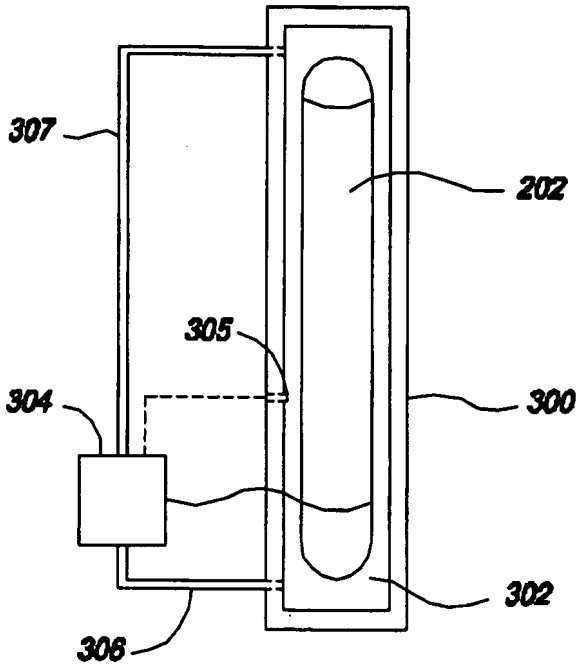


FIG.3

"A heated/cooled fluid 302 surrounds the storage vessel 202. An operably associated controller/heating-cooling/fluid replenishment/pressure control system 304, of a type known in the art, controls the heating/cooling coil 302 to maintain the storage vessel 202 and its contents at or near a predetermined temperature and pressure, based upon readings from sensor 305." Specification at [0014]. "The controller 304 also provides for replenishment and circulation of fluid 302 within the environmental boundary 300 via entry and return piping . . . ." Id. "Temperature control is important in the instance of hydrates to ensure that they do not sublimate and for gases, to ensure that they remain in their gaseous form." Id.

With specific reference to the specification and drawings, independent claim 1 of the present application recites:

1. **A floating structure comprising:**

a floatable hull (102 in Figures 1, 2; spec., p. 4, line 9) **that presents an upper**

deck (106 in Figure 2; spec., p. 4, lines 14-17);

a column assembly that is retractable and extendable below the hull (104 in Figures 1, 2; spec, p. 4, lines 10-13); **and**

a storage vessel (202 in Figures 2 and 3) **for storage of a material of the group consisting of hydrocarbon gas and solid hydrocarbon hydrates** (spec., page 4, lines 20-25); **and**

wherein the storage vessel is surrounded by an environmental boundary (300) **for control of temperature within the storage vessel, and wherein a fluid of desired temperature is circulated within the boundary to control the temperature within the storage tank.** (spec., page 5, lines 1-21).

Independent claim 10 recites:

10. A floating structure comprising:

a floatable hull (102 in Figures 1, 2; spec., p. 4, line 9) **that presents an upper deck** (106 in Figure 2; spec., p. 4, lines 14-17) **and defines a hollow central section** (103 in Figure 2; spec., page 4, lines 10-11) **therewithin;**

a column assembly mounted within the hollow central section and being retractable and extendable below the hull (104 in Figures 1, 2; spec, p. 4, lines 10-13); **and**

a plurality of storage vessels (202 in Figures 2 and 3) **disposed within the floatable hull** (spec., page 4, lines 20-21), **each of the storage vessels being useful for storage of hydrocarbon gas or hydrates** (spec., page 4, lines 21-23, page 5, lines 1-24).

Independent claim 14 recites:

14. A method of storing compressed hydrocarbon gases or solid hydrates following production and prior to transport to a remote location, comprising the steps of:

disposing said gases or hydrates within a storage vessel (step 308 in Figure 4) **upon a floating platform** (spec., page 6, lines 6-10), **the floating platform having a hull** (102 in Figures 1, 2; spec., p. 4, line 9) **and a column assembly that is extendable and retractable below the hull for stability of the floating platform** (104 in Figures 1, 2; spec, p. 4, lines 10-13);

controlling the temperature of the storage vessel by circulating a fluid of desired temperature about the storage vessel (step 310 in Figure 4; Spec., page 5, lines 4-21; page 6, lines 10-11).

VI. Grounds of Rejection to be Reviewed on Appeal

Applicant requests review of whether the Examiner has properly rejected claims 1-3, 6, 9 and 14-16 as obvious under 35 U.S.C. §103 over the cited references. The final office action of May 31, 2006 presented two grounds of rejection of the claims for obviousness:

1. that claims 1-3 and 7-12 are obvious over a combination of the Parsons and Ulbricht patents; and
2. that claims 1, 6, 10 and 13-16 are obvious over a combination of the Field and Ulbricht patents

VII. Argument

Applicant submits that:

1. The obviousness rejection of claims 1-3 and 7-12 over Parsons and Ulbricht is Improper.

a. There is no teaching or suggestion that it is desirable to combine
b. The references clearly teach away from the Examiner's combination

2. The obviousness rejection of claims 1, 6, 10 and 13-16 over Field and Ulbricht is Improper.

1. The Obviousness Rejection of Claims 1-3 and 7-12 over Parsons and Ulbricht is Improper

Claims 1-3 and 7-12 have been finally rejected for obviousness under 35 U.S.C. §103(a). The rejection is based upon a combination of Parsons (U.S. Patent No. 4,165,706) with the Ulbricht reference (U.S. Patent No. 3,507,242). The Examiner considers Parsons to teach a floating hull with upper deck and a column assembly that is retractable and extendable below the hull. 5/31/2006 office action at 2. She admits that Parsons fails to teach a storage vessel for storage of a material of the group consisting of hydrocarbon gas and solid hydrocarbon hydrates, an environmental boundary surrounding the storage vessel or the claimed temperature control feature. Id. at 3. The Examiner is relying upon Ulbricht to supply the teaching of "prior knowledge of flushing the space (i.e., an environmental boundary) between tank walls with inert gases to effect cooling . . ." 2/21/2006 Office action at 4. Ulbricht's invention relates to "[a] ship separated in a horizontal plane into a lower floating body of ordinary shipbuilding steel and an upper tank part of a material resistant to low temperatures." Ulbricht, col. 1, lines 14-16.

a. There is No Teaching or Suggestion that it is Desirable to Combine

"To establish a prima facie case of obviousness . . . there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available

to one of ordinary skill in the art, to modify the reference or to combine reference teachings." MPEP §2143. "The teaching or suggestion to make the claimed combination and . . . reasonable expectation of success must both be found in the prior art, not in applicant's disclosure." Id. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). "The mere fact that a reference can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990)(emphasis added); MPEP §2143.01. Stated another way, the prior art as a whole must "suggest the desirability" of the combination. *In re Beattie*, 974 F.2d 1309, 1311 (Fed. Cir. 1992). *See also*, *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340(Fed. Cir. 2000)("Trade-offs often concern what is feasible, not what is, on balance, desirable. Motivation to combine requires the latter.")

In this case, there are no suggestions or teachings in the art to modify either Field or Parsons to use the environmental boundary cooling shown in Ulbricht, as the Examiner has done. Neither the Parsons nor Field references contain any discussion of environmental boundary cooling or temperature control for storage tanks, and even the Examiner has never maintained that a suggestion is found in either of those references.

As detailed below, Applicant submits that no portion of the Ulbricht reference suggests the desirability of the use of an environmental boundary. In fact, Ulbricht teaches directly and strongly against it.

b. The References Clearly Teach Against the Examiner's Combination

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). That is the case here. Ulbricht

teaches against the use of an environmental boundary around tanks on a floating vessel, and one of skill in the art reading Ulbricht would be discouraged from use of an environmental boundary as dangerous, prone to leaks, complicated, expensive and otherwise disadvantageous. Ulbricht explains the boundary concept as follows:

> Since . . . liquefied gas has a temperature which is less than - 160° C., it would lead, within a relatively short period of time in case of contact with the ship's walls consisting of traditional shipbuilding steel, to an embrittlement of the hull, and the latter would no longer be able to withstand the water pressure at the embrittled places. For this reason, as is known, in the traditional tankers for liquefied gases, special measures must be taken to prevent the emergence of the liquefied gas into the receiving spaces provided in the hull. In particular, in each case, two container walls which are themselves sufficient to take up the internal pressure of the tank must be provided so that in case of a leak of the inner container the liquefied gas will still be intercepted in the outer container and will be prevented from emerging into the hull.

Ulbricht, col. 1, lines 27-42. Ulbricht then explains that the use of this type of environmental boundary is disadvantageous:

> . . . extensive, complicated leakage-detection devices must be provided in the space between the two walls in order to be able immediately to detect any possible leaks and repair them promptly. A further considerable expense results from the fact that, before the introduction of the liquefied gas, not only the inner container wall, but also the outer container wall must be cooled. Further difficulties result from the fact that between the ship's walls and the outer walls of the tanks, and possibly also between the two tank walls, there must be provided passages which can be walked through in order to permit examination of, or repairs to, the container walls. If repairs are necessary, particularly on the insulating layers which must be present, then as a rule the ship must be placed out of operation during the time of the repair, which means great loss.

Ulbricht, col. 1, lines 42-57 (emphasis added). Ulbricht states that ". . . the traversing of . . . [these spaces between the tank outer walls and the ship's walls] is dangerous . . . ." Ulbricht, col. 2, lines 57-60 (emphasis added).

> Ulbricht further warns against the use of such environmental boundaries writing:
>
> Disadvantages, furthermore, result from the fact that heating devices, bilge pumps, and the like must be provided for the intermediate spaces between

> the tank outer walls and the inner walls of the ship, that the pumps for the emptying of the tanks must be arranged at the top thereof, and the like.

Ulbricht, col. 1, lines 58-64 (emphasis added). Indeed, Ulbricht's invention is an alternative type of tanker that does not use environmental boundaries so that the disadvantages associated with the environmental boundary are avoided. Ulbricht notes that:

> Another advantage [of the invention] is that the ship's crew can no longer be endangered by the emergence of gas from safety valves or the like, since the tanks are surrounded on all sides by fresh air, and emerging gases pass directly into the atmosphere.

Ulbricht, col. 2, lines 52-56. The only relevant suggestions found in the art, and specifically in Ulbricht, are to avoid the use of an environmental boundary, and, therefore, this is a classic case of the art teaching against the combination proposed by the Examiner.

The Examiner has suggested that the environmental boundary cooling described in Ulbricht is a "non-preferred embodiment" upon which she is entitled to rely. 5/31/2006 office action at 8. Applicant believes that the Examiner's view is misplaced. This is not an instance in which the Ulbricht reference presents several alternatives (including an environmental boundary) for solving a problem and suggests that another alternative is more desirable than the use of the environmental boundary to solve the problem. In this case, the environmental boundary is, in fact, the problem that Ulbricht is attempting to solve.

2. The Obviousness Rejection of Claims 1, 6, 10 and 13-16 over Field and Ulbricht is Improper

Claims 1, 6, 10, and 13-16 have been rejected for obviousness over a combination of Field and Ulbricht. See 2/21/2006 office action at 5-6. The Examiner considers Field to disclose a floatable hull, upper deck, and a column assembly, but not the storage vessel as recited in the claims. See 5/31/2006 office action at 5-6. However, the Examiner

considers Ulbricht to show "a plurality of storage vessels (3, 9) for storage of a material consisting of hydrocarbon gas and solid hydrocarbon hydrates". Id. at 6. She further considers Ulbricht to teach "an environmental boundary in the form of an insulated shell" and "prior knowledge of flushing the space (i.e., environmental boundary) between tank walls with inert gases to effect cooling . . . ." Id. at 6.

With respect to claims 1, 6 and 14-16, Applicant has argued previously that the combination of Field and Ulbricht fails to disclose the subject matter of those claims because, as described in detail above, the Ulbricht patent explicitly teaches against the use of circulating a fluid in an environmental boundary to control the temperature of the storage vessel." 3/14/2006 Amendment at 8.

Applicant has also argued below that the proposed combination does not reveal at least the element of a storage vessel for storage of a material of the group consisting of hydrocarbon gas and solid hydrocarbon hydrates. See 3/16/2006 Amendment at 8. The Examiner has argued that "the prior art storage vessels [of Ulbricht] are 'useful for storage of hydrocarbon gas or hydrates' as recited in claim 10." 5/31/2006 office action at 8. She has also argued that the recitation of storing hydrocarbon gases or hydrates is merely a recitation of intended use of the claimed invention and, that if the prior art structure is capable of performing the intended use, it meets the claim. Id.

Applicant continues to maintain that there is no evidence or indication in the art that the storage vessels of Ulbricht would be suitable for or capable of storing either hydrocarbon gases or solid hydrocarbon hydrates. 3/16/2006 Amendment at 8. In fact, the storage vessels shown in Ulbricht are used to store liquids. Id. There is no evidence to show that these storage vessels have the pressure and temperature controls necessary to store either substance. All claim limitations must be taught or suggested. MPEP

§2143.03. Because at least this element is not taught or suggested by the art of record, claims 10-13 should be deemed allowable.

VIII. Claims Appendix

An appendix containing a copy of the claims involved in this appeal is attached hereto.

IX. Evidence Appendix

There has been no evidence pursuant to §§1.130, 1.131, or 1.132 or other evidence submitted in this application.

X. Related Proceedings Appendix

None.

Respectfully submitted,

Dated: June 12, 2007

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CLAIMS APPENDIX

1. (Previously presented) A floating structure comprising:

a floatable hull that presents an upper deck;

a column assembly that is retractable and extendable below the hull; and

a storage vessel for storage of a material of the group consisting of hydrocarbon gas and solid hydrocarbon hydrates; and

wherein the storage vessel is surrounded by an environmental boundary for control of temperature within the storage vessel, and wherein a fluid of desired temperature is circulated within the boundary to control the temperature within the storage tank.

2. (Previously presented) The floating structure of claim 1 wherein the storage vessel is disposed within the floatable hull.

3. (Previously presented) The floating structure of claim 1 wherein the storage vessel is located atop the floatable hull.

4. (Cancelled)

5. (Cancelled)

6. (Previously presented) The floating structure of claim 1 wherein the storage vessel is disposed within the column assembly of the floating structure.

7. (Cancelled)

8. (Cancelled)

9. (Previously presented) The floating structure of claim 4 wherein pressure within the storage vessel is also controlled.

10. (Previously presented) A floating structure comprising:

a floatable hull that presents an upper deck and defines a hollow central section therewithin;

a column assembly mounted within the hollow central section and being retractable and extendable below the hull; and

a plurality of storage vessels disposed within the floatable hull, each of the storage vessels being useful for storage of hydrocarbon gas or hydrates.

11. (Previously presented) The floating structure of claim 10 wherein at least one of the storage vessels is located upon the upper deck.

12. (Previously presented) The floating structure of claim 10 wherein at least one

of the storage vessels is located within the floating hull.

13. (Previously presented) The floating structure of claim 10 wherein at least one of the storage vessels is located within the column assembly.

14. (Previously presented) A method of storing compressed hydrocarbon gases or solid hydrates following production and prior to transport to a remote location, comprising the steps of:

disposing said gases or hydrates within a storage vessel upon a floating platform, the floating platform having a hull and a column assembly that is extendable and retractable below the hull for stability of the floating platform;

controlling the temperature of the storage vessel by circulating a fluid of desired temperature about the storage vessel.

15. (Previously presented) The method of claim 14 further comprising the step of offloading the gases or hydrates to a transport tanker.

16. (Previously presented) The method of claim 14 further comprising the step of mooring the floating platform in place proximate an offshore production well prior to disposing the gases or hydrates within the storage vessel.

17. (Cancelled)